

# **ANALYSIS OF WORK ZONE MOT DATA COLLECTION AND USAGE PROCEDURES**

## **PROBLEM STATEMENT**

Several years ago, in an effort to better understand the factors affecting traffic crashes in work zones, the Florida Department of Transportation (FDOT) developed the “Engineer’s Maintenance of Traffic (MOT) Evaluation at Accident Site” form. The MOT accident report form provides a means to document crashes which occur in a construction work zone, and it records information such as type of construction project, MOT setups, and safety devices used (e.g., cones). Many improvements to the existing work zone procedures have been based on the feedback received from this MOT form. Nevertheless, FDOT wanted to improve the existing data collection procedure and to make better use of the data collected.

## **OBJECTIVES**

The objective of this study was to develop an electronic database, including a querying and reporting program, based on the data collected using a newly developed, web-based Maintenance of Traffic Evaluation form for construction work zones. Specific objectives included the following:

1. Review MOT forms used by Florida and other state DOTs, and review forms completed by FDOT personnel, i.e., to examine current practice at FDOT and in other states.
2. Develop a new MOT Evaluation form.
3. Develop a database, including a querying and reporting program.
4. Select ongoing construction projects to serve as pilot projects for implementing the developed system.
5. Attempt to analyze crash trends on the pilot project site using the data collected from the construction site.

## **FINDINGS AND CONCLUSIONS**

Based on analysis of the FDOT’s MOT accident report form and of the data collection procedures used by other states, researchers redesigned and developed as a web-based data entry form FDOT’s MOT accident report form. The goal was to provide a quicker and less error-prone means of collecting data in the event of a work zone crash. Querying and reporting functionality were designed into the system.

The data from the old MOT accident reports could not readily be used to test the system due to incompatibilities in format and differences in the data items requested. The pilot study period was implemented for six-months in late 2001. Feedback from the pilot study and from FDOT construction engineers and project managers was used to revise the MOT computer system. One user concern was the time it took to load graphics-intensive screens, such as the screens displaying the MUTCD standard forms. However, most of the user feedback was positive, and even novice computer users found the system easy to navigate and utilize.

A major problem noted by the FDOT Construction Office with both the original paper form and the new computer system was the lack of compliance in completing the forms. In fact, one of the underlying goals for placing the form on-line was to increase the ease of use and thus improve the compliance rate and speed of completing the MOT forms. This goal was not realized, and a lack of completed forms hampered efforts to evaluate the system's usefulness and to collect sufficient data to draw preliminary conclusions on various MOT plans. Because of these difficulties, the on-line MOT crash reporting system was not implemented by FDOT. However, the system is being maintained as a demonstration project by the FAMU-FSU College of Engineering while the FDOT further considers methods to improve the rate of completion of MOT reports.

## **BENEFITS**

If the present barriers to implementation are overcome, the results of this research should provide a variety of benefits. The developed system can facilitate and enhance the ability of construction zone inspectors to direct their programs, allowing them to better work with information to more effectively study crash characteristics. It can also assist designers of MOT plans, who will be better able to study the various implemented MOTs and their effects. Consequently, improvements to the existing designs followed by FDOT that are based only on Manual of Uniform Traffic Control Devices (MUTCD) and Federal Highway Administration (FHWA) standards should follow.

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